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EXAMINER	
MADSEN, ROBERT A	
ART UNIT	**PAPER NUMBER**
1761	

DATE MAILED: 04/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No.	Applicant(s)
	09/581,253	IKEGAMI ET AL
	Examiner	Art Unit
	Robert Madsen	1761

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 May 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,6,10,12-14 and 16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,6,10,12-14 and 16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The Amendment filed May 2,2003 has been entered. Claims 5,7-9,15 have been cancelled. Claims 1,2,6,10,12-14,16 remain pending in the application.

2. The rejections of claims 1,2,6,12-16 under 35 USC 112, second paragraph are hereby withdrawn in light of the amendment.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leftault, Jr. et al. (US 4967538) in view of Lyu (US 3905507) and MacPherson (US 4402419) and Jonas et al. (US 5234126) and Yamamoto et al. (JP 01252274).

5. Regarding claim 1, Leftault et al. teach a low positive pressure container, including aluminum or steel seamless cans, holding a low positive pressure canned food, which includes a non-carbonated or carbonated beverage (Column 1, lines 19-65, Column 3, lines 1-25,Column 4, lines 4-23). Leftault et al. teach an annular ground portion (i.e. item 28) defines a crest portion and connects to an outer peripheral portion via an extending rising wall comprising two inclines, a fist incline (connected to the annular ground portion) has a greater angle of inclination (i.e. is closer to being a vertical line) than the second incline (See Figure3, wherein the slopes are formed from

item 28 to the wall 14). Furthermore, the can has an internal rising wall (formed by item 26) connected to a concave bead (item 30)extending into the can that has a gradually inclined portion continuous to the bottom wall (Figure 3, Column 5, line 49 to Figure 6 line 21). Leftault et al. teach the bottom of the can is pressed inwardly to attain the desired final pressure of the can (Column 6, lines 44-50). Leftault et al. teach the pressure may range from 1 to 50 psig (i.e. 0.07 to 3.5 kgf/sqcm), which includes 0.2 to 0.8 kgf/sqcm, and the bottom wall extends 0-1 in (i.e. 0 to 25.4 mm) into the can, including 0.5 to 6 mm (Column 6, lines 10-15). Pressing the bottom inwardly shortens the internal rising wall, decreases the distance of the bead relative to the bottom, and decreases the diameter of the bead, which increases the angle of incline for the internal rising wall increases (Column 5, lines 59-68, Figures 1-3, Column 6, lines 10-20). Leftault et al. further teach the can is *capable* of being hot filled or cold filled, and in either filling method, the can may be further sterilized and retorted after filling (Column 8, lines 29-46). Although Leftault et al. does not teach an inspection aptitude *per se*, the structure of Leftault et al. does meet this *intended* use, since the pressure attained in the can may be sensed by measuring the displacement of the outer peripheral (e.g. by a bulge in the side) as the can reacts to the change in internal pressure from pushing the bottom into the can (Column 7, lines 3-35). Leftault et al. only differs from claim 1 in three features: (1) Leftault et al. is silent in teaching the depth of the annular bead is 0.1 to 4mm and (2) Leftault et al. is silent in teaching the annular ground portion diameter is 70-90% of that of the can, and (3) Leftault et al. is silent in teaching the non-carbonated beverage is a low acid drink.

6. Lyu , like Leftault et al., also teaches an aluminum or steel can with a bottom resistant to deformation. Lyu teaches can dimensions that effect the rigidity: an annular ground portion diameter, the height of a flat bottom, the height of a concave bead, and the angle of inclination of an internal rising (Abstract, Column 2, lines 45-68, Column 3, lines 10-64, Column 4, lines 40-54, Column 5, lines 1-5,Figures 1 and 2). Lyu teaches the annular ground portion diameter is 85-95% of the outside can diameter to maintain rigidity for a pressurized can (Column 4, lines 21-54). Additionally, Lyu implicitly teaches the height of the bead from the flat bottom is 0-10 times the thickness of the material used (i.e. the height of the flat bottom is 8-15 times the thickness of the material used, and the height of a concave bead is 15-25 times the thickness of the material used). Lyu also teaches the difference in the height between the flat bottom and annular bead is an important factor to make the container more pressure resistant and result in a net zero force on the bottom wall. (Column 3, lines 10-64, Column 4, lines 40-54).

7. MacPherson teaches the conventional thickness of material used for pressurized cans: steel 0.006-0.009 in (i.e. 0.15 mm-0.22 mm) and aluminum 0.010-0.014 in (i.e. 0.25-0.35mm) (Abstract, Column 3, lines 10-20).

8. Jonas et al. are relied on as teaching the conventional container requirements for low acid beverages versus high acid beverages (Column 2, lines 5-41). Jonas et al. teach low acid food container must be able to withstand up to 20 psi and must be able to be heat sterilized.

9. Yamamoto et al. are relied on as evidence of the conventionality of an aluminum or steel cans comprising an internal pressure of 0.6-1.8 kgf/sqcm , resistant to deformation, that undergo retorting after filling and sealing for *low acid* drinks (Abstract).

10. With respect to an annular ground portion of 70-90% the diameter of the can, it would have been obvious to select a annular ground portion of between 85-90% of the outer diameter of the can since Lyu teaches the annular ground portion diameter is 85-95% of the outside can diameter to maintain rigidity for an aluminum or seal pressurized can for holding food products with a bottom resistant to deformation, and one would have been substituting one annular ground portion design for another for the same purpose: providing an aluminum or seal pressurized can for holding food products with a bottom resistant to deformation. To further select any particular diameter between 70 and 85% would have been an obvious result effective variable of other can dimensions since Lyu teaches the annular ground portion diameter in addition to the height of a flat bottom, the height of a concave bead, and the angle of inclination of an internal rising wall affect the rigidity of the cans.

11. With respect to the particular height of the concave bead as recited in claims 1 and 10, it would have been obvious to select a concave annular bead height of 0.1 to 3.5 mm for aluminum and 0.1 to2.2 mm for steel since Leftault et al. teach the material used is either aluminum or steel, Lyu teaches the height of the flat bottom is 8-15 times the thickness of the material used and the height of a concave bead is 15-25 times the thickness of the material used, and MacPherson teaches the conventional thickness of material used for pressurized cans: steel 0.006-0.009 in (i.e. 0.15 mm-0.22 mm) and

aluminum 0.010-0.014 in (i.e. 0.25-0.35mm). One would have been substituting one concave bead height for another for same purpose: a pressurized food can made of aluminum or steel and having a similarly contoured bottom having the same bottom height (i.e. based on MacPherson's conventional thickness of material, Lyu teaches the same bottom height as Leftault et al.: 1.2 mm to 3.3 mm for steel and 2.0 to 5.25 mm for aluminum). Furthermore, to select any height from 3.5 to 4.0 would have been an obvious result effective variable of the desired final pressure of the can since Leftault et al. teach the bottom can be pressed inwardly by 0-25.4 mm depending on the desired final pressure and the concave bead height is affected by the distance the bottom is pressed.

12. With respect to the particular thickness of the bottom wall, it would have been obvious to select a thickness as 0.15 to 0.25 mm for steel and 0.25-0.35 mm for aluminum, since Leftault et al. teach pressurized steel or aluminum cans and

13. MacPherson teaches the conventional thickness of material used for pressurized cans is steel 0.15 mm-0.22 mm and aluminum 0.25-0.35mm. One would have been substituting on conventional thickness for another for the same purpose: pressurized aluminum or steel cans.

14. With respect to the canned food comprising a low acid drink and applied with retort and sterilizing processing after filling and sealing , to select any particular type of beverage, whether it is a low or high acid beverage, would have been an obvious matter of choice since the aluminum or steel cans taught by Leftault are capable of being used for carbonated or non-carbonated beverages, can withstand pressures of1 to 50 psig

(i.e. 0.07 to 3.5 kgf/sqcm), and may be retort and sterilizing processing after filling and sealing and Jonas et al. teach low acid beverages require containers to withstand pressures up to 20 psi and heat sterilization, and Yamamoto et al. teach aluminum or steel cans comprising an internal pressure of 0.6-1.8 kgf/sqcm , resistant to deformation, that undergo retorting after filling and sealing are suitable for low acid drinks. . One would have been substituting one conventional drink for another for the same purpose: heat sterilizing after filling.

15. Regarding claim 6, Leftault et al. teach the can may include a carbonated drink , which would contribute to a positive pressure by gas exchange.

16. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leftault, Jr. et al. (US 4967538) in view of Lyu (US 3905507) and MacPherson (US 4402419) and Jonas et al. (US 5234126) and Yamamoto et al. (JP 01252274), as applied to claims 1 and 6 above, further in view of Yamaguchi (US 443112).

17. Leftault et al. are silent in teaching the internal pressure is maintained with an accuracy of +/-0.2 kgf/sqcm. However, Yamaguchi, who teaches conventionality of a pressurized aluminum or steel can having a flat bottom positioned lower than an annular bead like Leftault (Abstract, Examples), also teaches these types of cans are given a safety range of 0.2-0.5 kgf/sqcm (Example 5). Therefore, it would have been obvious to maintain an accuracy of +/- 0.2kgf/sqcm, since this is the conventional safety range for aluminum or steel cans with the recited bottom structure.

18. Claims 10,12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leftault, Jr. et al. (US 4967538) in view of Lyu (US 3905507), and MacPherson (US 4402419).

19. Regarding claims 10 and 14, Leftault et al. teach a low positive pressure container, including aluminum or steel seamless cans, holding a low positive pressure canned food, which includes a non-carbonated beverage (Column 1, lines 19-65, Column 3, lines 1-25,Column 4, lines 4-23). Leftault et al. teach an annular ground portion (i.e. item 28) defines a crest portion and connects to an outer peripheral portion via an extending rising wall comprising two inclines, a fist incline (connected to the annular ground portion) has a greater angle of inclination (i.e. is closer to being a vertical line) than the second incline (See Figure3, wherein the slopes are formed from item 28 to the wall 14). Furthermore, the can has an internal rising wall (formed by item 26) connected to a concave bead (item 30)extending into the can that has a gradually inclined portion continuous to the bottom wall , as recited in claim 14 (Figure 3, Column 5, line 49 to Figure 6 line 21). Leftault et al. teach the bottom of the can is pressed inwardly to attain the desired final pressure of the can (Column 6, lines 44-50). Leftault et al. teach the pressure may range from 1 to 50 psig (i.e. 0.07 to 3.5 kgf/sqcm), which includes 0.2 to 0.8 kgf/sqcm, and the bottom wall extends 0-1 in (i.e. 0 to 25.4 mm) into the can, including 0.5 to 6 mm (Column 6, lines 10-15). Pressing the bottom inwardly shortens the internal rising wall, decreases the distance of the bead relative to the bottom, and decreases the diameter of the bead, which increases the angle of incline for the internal rising wall increases (Column 5, lines 59-68, Figures 1-3, Column

6, lines 10-20). Although Leftault et al. does not teach an inspection aptitude *per se*, the structure of Leftault et al. does meet this *intended* use, since the pressure attained in the can may be sensed by measuring the displacement of the outer peripheral (e.g. by a bulge in the side) as the can reacts to the change in internal pressure from pushing the bottom into the can (Column 7, lines 3-35). Leftault et al. only differs from claim 10 in three features: (1) Leftault et al. is silent in teaching the depth of the annular bead is 0.1 to 4mm and (2) Leftault et al. is silent in teaching the annular ground portion diameter is 70-90% of that of the can, and (3) Leftault et al. are silent in teaching a particular thickness for the bottom wall such as 0.15 to 0.25 mm for steel and 0.25-0.35 mm for aluminum.

20. Lyu , like Leftault et al., also teaches an aluminum or steel can with a bottom resistant to deformation. Lyu teaches can dimensions that effect the rigidity: an annular ground portion diameter, the height of a flat bottom, the height of a concave bead, and the angle of inclination of an internal rising (Abstract, Column 2, lines 45-68, Column 3, lines 10-64, Column 4, lines 40-54, Column 5, lines 1-5,Figures 1 and 2). Lyu teaches the annular ground portion diameter is 85-95% of the outside can diameter to maintain rigidity for a pressurized can (Column 4, lines 21-54). Additionally, Lyu implicitly teaches the height of the bead from the flat bottom is 0-10 times the thickness of the material used (i.e. the height of the flat bottom is 8-15 times the thickness of the material used, and the height of a concave bead is 15-25 times the thickness of the material used). Lyu also teaches the difference in the height between the flat bottom and annular bead is an important factor to make the container more pressure resistant

and result in a net zero force on the bottom wall. (Column 3, lines 10-64, Column 4, lines 40-54).

21. MacPherson teaches the conventional thickness of material used for pressurized cans: steel 0.006-0.009 in (i.e. 0.15 mm-0.22 mm) and aluminum 0.010-0.014 in (i.e. 0.25-0.35mm) (Abstract, Column 3, lines 10-20).

22. With respect to an annular ground portion of 70-90% the diameter of the can, it would have been obvious to select a annular ground portion of between 85-90% of the outer diameter of the can since Lyu teaches the annular ground portion diameter is 85-95% of the outside can diameter to maintain rigidity for an aluminum or seal pressurized can for holding food products with a bottom resistant to deformation, and one would have been substituting one annular ground portion design for another for the same purpose: providing an aluminum or seal pressurized can for holding food products with a bottom resistant to deformation. To further select any particular diameter between 70 and 85% would have been an obvious result effective variable of other can dimensions since Lyu teaches the annular ground portion diameter in addition to the height of a flat bottom, the height of a concave bead, and the angle of inclination of an internal rising wall affect the rigidity of the cans.

23. With respect to the particular height of the concave bead as recited in claims 1 and 10, it would have been obvious to select a concave annular bead height of 0.1 to 3.5 mm for aluminum and 0.1 to2.2 mm for steel since Leftault et al. teach the material used is either aluminum or steel, Lyu teaches the height of the flat bottom is 8-15 times the thickness of the material used and the height of a concave bead is 15-25 times the

thickness of the material used, and MacPherson teaches the conventional thickness of material used for pressurized cans: steel 0.006-0.009 in (i.e. 0.15 mm-0.22 mm) and aluminum 0.010-0.014 in (i.e. 0.25-0.35mm). One would have been substituting one concave bead height for another for same purpose: a pressurized food can made of aluminum or steel and having a similarly contoured bottom having the same bottom height (i.e. based on MacPherson's conventional thickness of material, Lyu teaches the same bottom height as Leftault et al.: 1.2 mm to 3.3 mm for steel and 2.0 to 5.25 mm for aluminum). Furthermore, to select any height from 3.5 to 4.0 would have been an obvious result effective variable of the desired final pressure of the can since Leftault et al. teach the bottom can be pressed inwardly by 0-25.4 mm depending on the desired final pressure and the concave bead height is affected by the distance the bottom is pressed.

24. With respect to the particular thickness of the bottom wall, it would have been obvious to select a thickness as 0.15 to 0.25 mm for steel and 0.25-0.35 mm for aluminum, since Leftault et al. teach pressurized steel or aluminum cans and

25. MacPherson teaches the conventional thickness of material used for pressurized cans is steel 0.15 mm-0.22 mm and aluminum 0.25-0.35mm. One would have been substituting on conventional thickness for another for the same purpose: pressurized aluminum or steel cans.

26. Regarding claim 12, Leftault et al. teach the diameter of flat bottom portion is smaller than the annular ground diameter (Figures), but is silent in teaching 60-90% of the ground portion. Lyu, who teaches a similar can as Leftault et al., also teaches the

annular ground portion diameter is 85-95% of the outside can diameter, the concave bead diameter is 75% to 95% of the annular ground portion diameter, and the flat bottom diameter is 65% to 85% of the concave bead diameter. These relationships prevent deformation of the bottom of the container (Column 4, lines 21-55). Thus Lyu teaches the flat bottom diameter is 60-81% of the ground portion diameter. Therefore it would have been obvious to select a bottom diameter of at least 60-81% of the ground portion since this a well known bottom diameter for prevent deformation of a bottom in a container similar to Leftault et al. Furthermore, to select a flat bottom diameter to 82-90% of the ground portion diameter would have been an obvious design choice given that Leftault et al. provides a result effective variable of the desired pressure of the container since Leftault et al. shows in the drawings a greater/steeper slope for both the internal inclined portion and the concave bead to bottom gradual incline portion, than Lyu, which would create a larger flat bottom diameter.

27. Regarding claim 13, Leftault et al. teach an internal rising wall connected to the annular ground portion. As the flat bottom is pushed in, the concave bead diameter and the length of the incline between the annular concave bead and bottom become smaller (i.e. the slope of the internal rising wall becomes greater), but the slope from the annular concave bead to the flat bottom, the diameter of the flat bottom remaining, and the width of the annular ground portion remain fixed (Column 4, lines 24-61, Column 5 line 49 to Column 6, line 10, Figures 2 and 3). Therefore, Leftault et al. teach that the internal rising wall approaches 90° as the bottom is pressed inward. However Leftault et al. are silent in teaching 65° and 90°. Lyu is relied on as evidence of the conventionality of

having an angle of inclination of the internal wall connecting the annular portion to the annular concave bead of an initial slope of 75-90° and a final of 55-70°(i.e. Lyu defines this angle relative to the vertical axis as 0-15° and 20-35° in Column 4, lines 21-54). Lyu teaches this angle affects the rigidity of the bottom wall and is especially important for thinner materials (Column 4, lines 14-20). Therefore, it would have been obvious to modify Leftault et al. and use an angle between 65° and 90° since Leftault et al. teach the angle approaches 90° as the bottom is pushed in and these angles improve the rigidity of the bottom wall.

1. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leftault, Jr. et al. (US 4967538) in view of Lyu (US 3905507) and MacPherson (US 4402419) and Cerny et al. (US 4381061).

2. Leftault et al. teach a low positive pressure container, including aluminum or steel seamless cans, holding a low positive pressure canned food (Column 1, lines 19-65, Column 3, lines 1-25,Column 4, lines 12-23). The pressure may range from 1 to 50 psig (i.e. 0.07 to 3.5 kgf/sqcm), which includes 0.2 to 0.8 kgf/sqcm, and the bottom wall extends 0-1 in (i.e. 0 to 25.4 mm) into the can, including 0.1 to 10 mm (Column 6, lines 10-15). The annular ground portion (i.e. item 28) connects to the outer peripheral portion via an extending rising wall comprising two inclines, a fist incline (connected to the annular ground portion) has a greater slope (i.e. is closer to being a vertical line) than the second incline (See Figure3). Furthermore, the can has an internal rising wall (formed by item 26) connected to a concave bead (item 30) extending into the can

(Figure 3, Column 5, line 49 to Figure 6 line 21). Leftault et al. teach the bottom of the can is pressed inwardly to attain the desired final pressure of the can (Column 6, lines 44-50). Pressing the bottom inwardly shortens the internal rising wall, decreases the distance of the bead relative to the bottom, and decreases the diameter of the bead, which increases the angle of incline for the internal rising wall increases (Column 5, lines 59-68, Figures 1-3, Column 6, lines 10-20). Leftault et al. teach the can has an inspection aptitude, since the pressure attained in the can may be sensed by measuring the displacement of the outer peripheral (e.g. by a bulge in the side) as the can reacts to the change in internal pressure resulting from pushing the bottom into the can (Column 7, lines 3-35). Leftault et al. are silent in teaching the relative diameter of the annular ground portion is 70-98% the diameter of the can, the relative diameter of the bottom wall is 60-90% of the annular ground portion, the height of the concave bead relative to the flat bottom is 0.1-5 mm, the internal rising wall angle is 65° to up to 90°, and the external rising wall angle of 5 to 30°.

3. Lyu, like Leftault et al. teach an aluminum or steel can with a bottom resistant to deformation. Lyu is relied on as evidence of the conventional dimensions selected, including an annular ground portion diameter, the height of a flat bottom, the height of a concave bead, and the angle of inclination of an internal rising wall together effect the rigidity of the cans ((Abstract, Column 2, lines 45-68, Column 3, lines 10-64, Column 4, lines 40-54, Column 5, lines 1-5,Figures 1 and 2).

4. With respect to the annular ground portion being 70-98% the diameter of the can, Lyu teaches the annular ground portion diameter is 85-95% of the outside can diameter

to maintain rigidity for a pressurized can (Column 4, lines 21-54) Therefore, it would have been obvious to select a annular ground portion of between 85-95% of the outer diameter of the can since Lyu, like Leftault et al., teaches this provides a rigid bottom structure for a pressurized aluminum or steel can holding food products, and one would have been substituting one annular ground portion design for another for a pressurized can. To further select between 70 and 85% would have been an obvious result effective variable of other can dimensions since Lyu teaches the annular ground portion diameter in addition to the height of a flat bottom, the height of a concave bead, and the angle of inclination of an internal rising wall all effect the rigidity of the cans.

5. With respect to the relative diameter of the bottom wall being 60-90% of the annular ground portion, Lyu teaches the annular ground portion diameter is 85-95% of the outside can diameter, the concave bead diameter is 75% to 95% of the annular ground portion diameter, and the flat bottom diameter is 65% to 85% of the concave bead diameter (Column 4, lines 41-54). That is, Lyu teach the bottom wall diameter is 49% to 81% of the annular ground portion diameter. Therefore, it would have been obvious to modify Leftault et al. such that the bottom wall diameter is 60 to 81% of the diameter of the annular ground portion since Lyu teaches this diameter ratio will assure a pressure resistant bottom for the same type of container as Leftault et al. To select 82% to 90% would have been an obvious result effective variable of other can dimensions since Lyu teaches the annular ground portion diameter in addition to the height of a flat bottom, the height of a concave bead, and the angle of inclination of an internal rising wall all effect the rigidity of the cans.

6. With respect to the concave bead having a height of 0.1-5 mm relative to the flat bottom, Leftault et al. teach the bottom is 0-25.4 mm depending on the desired final pressure and the concave bead height is affected by the distance the bottom is pressed. Lyu implicitly teaches the height of the bead from the flat bottom is 0-10 times the thickness of the material used (i.e. the height of the flat bottom is 8-15 times the thickness of the material used, and the height of a concave bead is 15-25 times the thickness of the material used). Lyu also teaches the difference in the height between the flat bottom and annular bead is an important factor to make the container more pressure resistant and result in a net zero force on the bottom wall. (Column 3, lines 10-64, Column 4, lines 40-54). MacPherson teaches the conventional thickness of material used for pressurized cans: steel 0.006-0.009 in (i.e. 0.15 mm-0.22 mm) and aluminum 0.010-0.014 in (i.e. 0.25-0.35mm) (Abstract, Column 3, lines 10-20). Thus, Lyu, not only teaches bottom height within the range of Leftault et al., (i.e. 1.2 mm to 3.3 mm for steel and 2.0 to 5.25 mm for aluminum), but teaches the concave bead height from the flat bottom is 0.1 to 3.5 mm, depending on the material selected (i.e. 0 -3.5 mm for aluminum and 0-2.2mm for steel). Therefore it would have been obvious to select a concave annular bead height of 0.1 to 3.5 mm for aluminum and 0.1 to2.2 mm for steel since Lyu teaches this is a conventional concave bead height for a can with the flat bottom height of Leftault et al., and one would have been substituting one concave bead for another for a pressurized food can made of aluminum or steel and having a similarly contoured bottom. To select any height from 3.5 to 5 mm would have been an obvious result effective variable of the desired final pressure of the can since Leftault et al.

teach the bottom can be pressed inwardly by 0-25.4 mm depending on the desired final pressure and the concave bead height is affected by the distance the bottom is pressed.

7. With respect to having an internal rising wall angle of 65 to 90°, Leftault et al. teach an internal rising wall connected to the annular ground portion. As the flat bottom is pushed in, the concave bead diameter and the length of the incline between the annular concave bead and bottom become smaller (i.e. the slope of the internal rising wall becomes greater), but the slope from the annular concave bead to the flat bottom, the diameter of the flat bottom remaining, and the width of the annular ground portion remain fixed (Column 4, lines 24-61, Column 5 line 49 to Column 6, line 10, Figures 2 and 3). Therefore, Leftault et al. teach that as the internal rising wall approaches 90° as the bottom is pressed inward. However Leftault et al. are silent in teaching 65° and 90°. Lyu is relied on as evidence of the conventionality of having an angle of inclination of the internal wall connecting the annular portion to the annular concave bead of an initial slope of 75-90° and a final of 55-70°(i.e. Lyu defines this angle relative to the vertical axis as 0-15° and 20-35° in Column 4, lines 21-54). Lyu teaches this angle affects the rigidity of the bottom wall and is especially important for thinner materials (Column 4, lines 14-20). Therefore, it would have been obvious to modify Leftault et al. and use an angle between 65° and 90° since Leftault et al. teach the angle approaches 90° as the bottom is pushed in and these angles improve the rigidity of the bottom wall.

8. With respect to having an angle of 5-30° for the external rising wall, Leftault et al. clearly teach an angle between 0° and 90° that changes as the bottom is pressed forward. Cerny et al. are relied on as evidence of the conventionality of providing food

containers with an external rising wall angle from 5° to 30° (Abstract, Figures, Column 4, lines 23-39), to provide wall strength. Therefore, it would have been obvious to modify to select an angle between 5° to 30° since this is a known range for external rising wall angles for containers resistant to pressure.

Response to Arguments

28. Applicant's arguments filed May have been fully considered but they are not persuasive.

29. Applicant argues that the *original shape* of the can of Leftault differs from the recited can structure. However, the post-filling shape of the can of Leftault matches the general shape and internal pressure as claimed. Although applicant argues the recited structure offers an added benefit of omitting the step of reforming as taught by Leftault, applicant is reminded that the pending claims are directed to a can structure, not a method of forming the can structure.

30. With respect to Leftault not teaching a "tapping inspection aptitude" , the tapping inspection aptitude is defined by having a particular bottom wall structure, which Leftault teaches in general. Leftault does not teach a particular the depth of the annular bead , the diameter of annular ground portion diameter relative to that of the can, or the a particular thickness for the bottom wall , but as discussed above in the rejections Lyu and MacPherson suggest specific values for these features for the same purpose as Leftault. The fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art (i.e. a tapping inspection aptitude)

cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

31. In response to applicant's argument that Lyu fails to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., Lyu's H1 and H2 formulas not teaching the particular dimensions taught in applicant's Embodiment 1) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). First, the claims recite ranges, not an individual combination of values. Second, it is Leftault , the primary reference, that teaches the bottom height is anywhere from 0-25.4 mm, which overlaps the recited H1 ranges. Third, Lyu's formulas yield H1 value not only overlapping Leftault's H1 value, but also the recited range, based on the range of thickness of conventional aluminum or steel . For example, with the recited bottom wall height, H1, of steel is H1 is 1.2-2.25 mm and for aluminum is 2-5.25mm. In addition, the values of H2 determined by Lyu are within the recited annular bead ranges, Lyu teach the height of the annular bead relative to the outer peripheral portion for steel H2 is 2.25-5.25mm and aluminum is 3.75-8.75 mm, and thus the recited annular bead height (i.e. relative to the bottom wall) is 1.05-3 mm for steel and 1.75-3.5 mm for aluminum.

32. Applicant argues Lyu does not teach a step change in the rising wall. However, it is Leftault, the primary reference, who teaches the step change, and overall general structure recited in the claims. Further Lyu is relied on as evidence of the conventional

annular bead height and bottom wall diameter relative to the outer can diameter to provide a stable can structure.

33. With respect to MacPherson, Leftault teaches the can is made of aluminum or steel. MacPherson is relied on as evidence of the conventional wall thickness of aluminum or steel cans.

34. With respect Yamamoto, Yamamoto is merely relied on as evidence of including low acid drinks in cans having an internal pressure within in the range taught by Leftault.

35. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). The reasons for such combinations have been explained in the preceding paragraphs.

Conclusion

36. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

37. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

38. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Madsen whose telephone number is (571) 272-1402. The examiner can normally be reached on 7:00AM-3:30PM M-F.

39. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on (571) 272-1398. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

40. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Robert Madsen
Examiner
Art Unit 1761

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